

# BEST AVAILABLE COPY

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
15 November 2001 (15.11.2001)

PCT

(10) International Publication Number  
**WO 01/86928 A1**

(51) International Patent Classification<sup>7</sup>: H04M 3/51, 7/00

(74) Agent: WUYTS, Koenraad, Maria; Koninklijke KPN N.V., P.O. Box 95321, NL-2509 CH The Hague (NL).

(21) International Application Number: PCT/EP01/05482

(22) International Filing Date: 11 May 2001 (11.05.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
1015165 12 May 2000 (12.05.2000) NL

(71) Applicant (for all designated States except US): KONINKLIJKE KPN N.V. [NL/NL]; Stationsplein 7, 9726 AE Groningen (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): AASMAN, Jannes [NL/NL]; Fagelstraat 7, NL-2334 AV Leiden (NL). KARDOL, Johannes, Jan [NL/NL]; Dirk Costerplein 278, NL-2624 VC Delft (NL). KALBERG, Robertus, Johannes, Nicolaas [NL/NL]; Azaleapark 53, NL-2724 JB Zoetermeer (NL).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

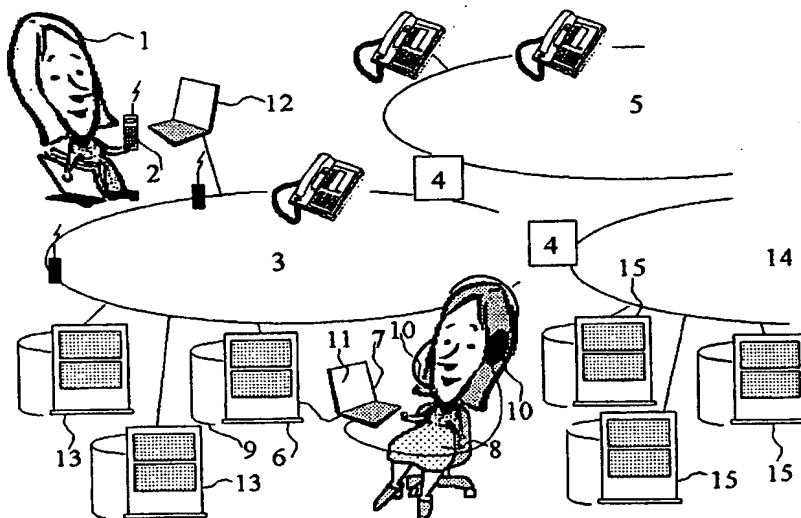
— of inventorship (Rule 4.17(iv)) for US only

Published:

— with international search report

[Continued on next page]

(54) Title: COMMUNICATION SYSTEM



(57) Abstract: Communication system comprising user terminals (2, 12) operable by users (1) and connecting means (3). Connected to a "personal assistant" server (6) is a terminal (7), operated by a human "personal assistant" (8) who can be called up by users to provide information or offer other services. The server (6) is connected to a users database (9) containing user-specific data and settings, whereby the server, on detection of a call from a user terminal (2, 12) to the "personal assistant" terminal (7), reads out the data and settings of the calling user from the database. The server (6) is connected to internal or external data systems (13, 15), which are accessible and operable by the "personal assistant" terminal (7) with control by user data and settings called up from the users database (9). The data systems can be an e-mail system, a diary system, internal or external information systems, an SMS system, a fax system, a unified messaging system, etc.

WO 01/86928 A1



— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

## Communication system

### FIELD OF THE INVENTION

The invention relates to a communication system comprising user terminals operable by users and connecting means for connecting the user terminals to a telecommunications network. The user terminals referred to below can include to be voice terminals.

### BACKGROUND OF THE INVENTION

A communication system of this kind is generally known as a private or public telephony system. The object of the present invention is to provide a system by which personified and personal assistance is offered to a user, which in fact amounts to a personal secretary function and which is intended especially for business and small-business use and is particularly well suited for teleworking "communities", etc. In contrast with a number of known systems, the present system does not, in principle, make use of "voice response" or "voice recognition" etc., but uses a human "personal assistant" or "operator" with sufficient resources at his or her disposal to offer very efficient personal help to a variety of users.

### SUMMARY OF THE INVENTION

The communication system according to the invention comprises a "personal assistant" server connected to the connecting means, to which server a "personal assistant" terminal is connected, which can comprise a voice part and a data part and which can be operated by a human "personal assistant" who can be called up by the users via the connecting means. The "personal assistant" server, together with the personal "operator" who makes use of the facilities of the server, is part of the system. In order to have all relevant data "on hand" when a user calls, the server is connected to a users database containing data about the various users, whereby the server, on detection of a call from a user voice terminal to the voice part of the "personal assistant" terminal, reads out the data of the calling user from the database and makes these data available to the data part of the "personal assistant" terminal. This enables the "operator" to see on the screen which user is calling as well as the user's relevant personal data. With the aid of these data, the operator can perform actions on behalf of the calling user, such as reading the user's e-mail etc., making use of the user-specific data and settings withdrawn from the database, namely the "username", "password" and "preferences", which are not shown on the screen but are used "underwater" for activating the user's e-mail account

etc. (without the operator being able to read the username or - in particular - the password). Examples of this will be given in the working example. The users database can be connected via the connecting means to user data terminals, thus enabling the users themselves to read or modify their data.

As mentioned above, a particular object of the present invention is the support by means of the "personal assistant" server of the "personal assistant" in voice communication between the (voice) terminal of the user and the voice part of the terminal of the "personal assistant". The invention is not, however, as mentioned above, limited to this: the "personal assistant" server can also, by providing the "personal assistant" with specific user data and making user-specific settings, offer assistance and support when the communication between the user and the "personal assistant" proceeds via their (alphanumeric or graphic) data terminals. For such data communication as well, the "personal assistant" server can read out the user-specific data and settings from the database with reference to the address of the "calling" data terminal of the user.

As well having access to the personal users data, the "operator" can also be connected by means of his/her terminal and the "personal assistant" server to internal or external data systems (or "data-processing systems"), which can be operated by means of the "personal assistant" terminal. In many cases, depending on the sort of data system, the data system is operable by the "personal assistant" with (co-)control by user data of the calling user called up by the server from the users database. The data system may, for example, be an e-mail system; it is clear that the "personal assistant" - for example in reply to a query by the user to the "personal assistant": "Is there any mail for me?" - can only access that e-mail system by using user data (from the users database) such as login name and password of the user in question. The data system can also be a (personal) diary system (often integrated with the e-mail system) or an information system, for example a public transport information system that is consulted by the "personal assistant" at the user's request ("When is my appointment with Mr. P." or "When does the first train leave for G."). Other possibilities are an SMS system, a fax system ("Are there any faxes for me" or a "unified messaging" system ("Have any important messages arrived?"). Incidentally, it is also envisaged that the "personal assistant" can also - at the request of the user - send messages (e-mail, fax, SMS) or make appointments and enter them in the user's diary, etc. ("Miss A., please send an SMS message to X. to say I will be taking a later train.").

The invention will now be described in more detail with

reference to a working example.

#### EXAMPLES

Figure 1 shows a communication system comprising user voice terminals 2 operable by users 1 and connecting means, namely a network 3. Via a switch 4 the user voice terminals can be connected to a telecommunications network 5. Via another switch 4 the network 3 can be connected to a (for example IP based) data network 14. As well as the user voice terminals 2, the network 3 has connected to it, amongst other things, a "personal assistant" server 6, which is connected to a "personal assistant" terminal 7. This terminal 7 comprises a voice part 10 and a data part 11 and can be operated by a human "personal assistant" (or "operator") 8 who can be called up by the users via the connecting means 3 and also vice versa. The "personal assistant" can also forward telephone calls to telephone sets etc. connected to the network 5.

The server 6 is connected to a users database 9 containing data about the various users 1. When a call from a user voice terminal 2 to the voice part 10 of the "personal assistant" terminal 7 is detected, the server reads the data of the calling user from the database and sends it to the data part 11 of the "personal assistant" terminal 7.

The users database 9 is also connected via the connecting means 3 to user data terminals 12, enabling the users 1 to read or modify their data.

The server 6 is additionally connected to various internal data systems 13 and/or - via a network 14 - to external data systems 15, which are accessible and operable by the "personal assistant" 8 by means of the "personal assistant" terminal 7. These data systems 13 and 15 are operable by the "personal assistant" 8 by means of the "personal assistant" terminal 7 with control by user data (data, settings, parameters) of the calling user 1 called up by the server 6 from the users database 9. The data system can be an internal (or external) e-mail system 13 (or 15 respectively), a diary system, an information system, for example an (external) Internet-based system or an (internal) intranet-based system. The data system can also be a Short Message System (SMS), a fax system or a unified messaging system.

If user 1 calls the "personal assistant" 8 (or more accurately server 6) via telephone set 2 and network 3, the extension number of user 1 is forwarded to the "personal assistant" server 6. On the basis of this extension number ("CLI"), server 6 searches in its database 9 for the personal data and settings of the user and reads these out. Some of these personal data - such as the name of the caller - are sent to screen 11 of the "personal assistant" terminal 7, while a call signal sounds in the voice part 10. The "personal assistant" 8 can now answer the call in a

personal manner ("Good afternoon, <user name>, how can I help you?") with the aid of the data (such as the user name) displayed on the screen 11. The user 1 can now ask questions or make requests which can be handled by the assistant with the aid of the personal user data and settings from the user database 9. For example, the e-mail address of the user is stored in the database 9 and will be read out from the database 9 in the event of a call by the user. The user 1 can now ask the question "Is there mail for me?", to which the assistant, with the aid of the user's e-mail address - that does not need to be displayed on the screen 11, can call up the e-mail of the user with a few simple actions and answer the question. Similarly, the user can ask the question "How are my shares doing?", which the assistant can answer simply and quickly if the user's share funds are stored in the personal data and can be read out in response to a call. Controlled by the read-out funds, an internal or external data system 13 or 15 respectively, which can provide the requested share prices, is consulted. Another example is the request by user 1 for the assistant to phone "home" to say that the user 1 will be coming home later. In this case, the "home" telephone number is read from the database 9 and either displayed on the screen 11 and used by the assistant for dialling, or incorporated as (invisible) attribute in a screen object ("Home telephone ") that can be activated by the screen mouse in order to dial the "home" telephone number and then to switch through to the user 1. The user can also ask the "operator" to make an appointment with another person, either by phone or via a shared diary system 13 or 15. For this as well, the "operator" needs the access codes etc. for the diary system, which are read out from the database 9. After being made, appointments are entered in the diary system 13 or 15 respectively, possibly after consultation with the user 1 via the voice part 10.

The users database 9 can, via the connecting means 3, be accessed and modified by the users 1. To enable the assistant to provide the user with data from various types of data systems, the server 6 is connected to various internal data systems 13 and/or external data systems 15, which can be operated by the assistant 8, making use of user data of the calling user 1 called up by the server 6 from the users database 9. The data system can, as already mentioned, be an internal or external e-mail or diary system, an information system based on, for example, the Internet or intranet, a Short Message System (SMS), a fax system or a unified messaging system.

In this way, the personal "operator" can, with the aid of server 6 and servers 13 and 15 operable from server 6, offer a wide range of services to each user 1 individually in an efficient but nevertheless personal (non-mechanical) manner.

It is pointed that the system according to the invention is based on the deployment of a human "operator" who, with the support of server 6 and servers 13 and 15, answers the users and serves them by setting up telephone connections to the network 5, obtaining information and/or performing tasks, making appointments, sending messages, etc. Although the system makes use of a human "operator", it is nevertheless envisaged that some tasks could be taken over by an "electronic operator", via "voice recognition" and "voice response" (VR), etc. For this purpose it is envisaged that the server 6 could comprise modules which record actual dialogues held between the users and the human "operator" and, based on this input, could be developed and trained to respond to data for VR.

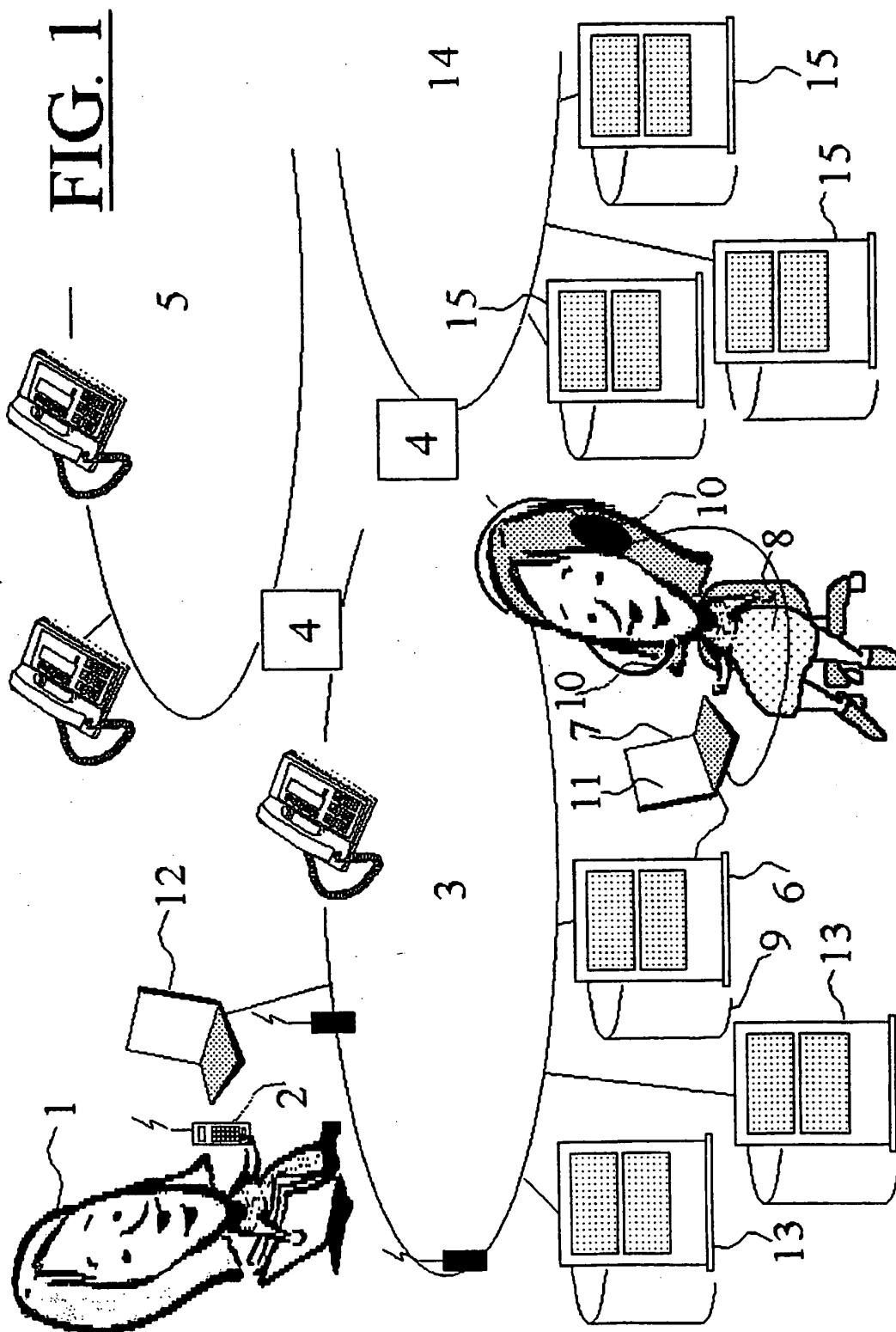
Although the main aim of the present invention is to improve voice-based communication between the "personal assistant" 8 and the users 1, the invention is also useful if the communication is based on data. The "personal assistant" server 6 can, by offering the "personal assistant" specific user data and making user-specific settings, also provide assistance and support if the communication between the user and the "personal assistant" proceeds via their (alphanumeric or graphic) data terminals 11 or 12 respectively. For such data communication as well, the "personal assistant" server can read out from the database 9 the user-specific data and settings based on the address of the "calling" data terminal 12 of the user and use them in the further interaction with the user.

## CLAIMS

1. Communication system comprising user terminals (2,12) operable by users (1) and connecting means (3) for connecting the user terminals to a telecommunications network (5,14), characterised by a "personal assistant" server (6) connected to the connecting means, to which server a "personal assistant" terminal (7) is connected, which can be operated by a human "personal assistant" (8) who can be called up by the users via the connecting means.
2. Communication system according to claim 1, characterised in that the server (6) is connected to a database (9) containing user-specific data and/or settings of the various users (1), whereby the server, on detection of a call from a user terminal (2,12) to the "personal assistant" terminal (7), reads out those user-specific data and/or settings of the calling user from the database.
3. Communication system according to claim 2, characterised in that the users database (9) is connected via the connecting means (3) to user data terminals (12), and the users (1) can read or modify their user-specific data and/or settings.
4. Communication system according to claim 2, whereby the user terminals are voice terminals (2) and the "personal assistant" terminal (7) comprises a voice part (10) and a data part (11), characterised in that the server (6), on detection of a call from a user voice terminal (2) to the voice part (10) of the "personal assistant" terminal (7), reads out the user-specific data and/or settings of the calling user from the database and makes these data available to the data part (11) of the "personal assistant" terminal (7).
5. Communication system according to claim 2, characterised in that the server (6) is connected to one or more internal or external data systems (13,15) which are accessible and operable by the "personal assistant" (8) by means of the "personal assistant" terminal (7).
6. Communication system according to claim 5, characterised in that the data system (13,15) in question is operable by the "personal assistant" (8) by means of the "personal assistant" terminal (7) with control by user-specific data and/or settings of the calling user (1) called up by the server (6) from the users database (9).
7. Communication system according to claim 5, characterised in that the data system (13,15) is an e-mail system that is operable by the "personal assistant" terminal (7) with control by the user-specific data and/or settings.
8. Communication system according to claim 5, characterised in that the data system (13,15) is an electronic diary that is operable by the "personal assistant" terminal (7) with control by the user-specific data and/or settings.



9. Communication system according to claim 5, characterised in that the data system is an information system that is operable by the "personal assistant" terminal (7) with control by the user-specific data and/or settings.
- 5 10. Communication system according to claim 5, characterised in that the data system is an SMS system that is operable by the "personal assistant" terminal (7) with control by the user-specific data and/or settings.
- 10 11. Communication system according to claim 5, characterised in that the data system is a fax system that is operable by the "personal assistant" terminal (7) with control by the user-specific data and/or settings.
- 15 12. Communication system according to claim 5, characterised in that the data system is a unified messaging system that is operable by the "personal assistant" terminal (7) with control by the user-specific data and/or settings.
- 20 13. Personal assistant server (6) comprising means for making a connection, via connecting means (3), to user terminals (2,12) operable by users (1) and the onward connection of said user terminals to a telecommunications network (5), characterised by means for connecting a personal assistant terminal (7) that can be operated by a
- 25 human "personal assistant" (8) who can be called up by the users via the connecting means, whereby the server (6) is connected to a users database (9) containing user-specific data and/or settings about the various users (1), whereby the server, on detection of a call from a user terminal
- 30 (2,12) to the "personal assistant" terminal (7), reads out the data of the calling user from the database.
- 35 14. Personal assistant server according to claim 13, characterised by means for connecting the server (6) to one or more internal or external data systems (13,15) which are accessible and operable by the "personal assistant" (8) by means of the "personal assistant" terminal (7), with control by user-specific data and/or settings of the calling user (1) called up by the server (6) from the users database (9).
- 40 15. Personal assistant server according to claim 13, whereby the user terminals are voice terminals (2) and the "personal assistant" terminal (7) comprises a voice part (10), characterised by means for recording and processing actual dialogues between the voice part (10) of the
- 45 "personal assistant" terminal (7) and the voice terminal (2) of the user (1).



# INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 01/05482

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 H04M3/51 H04M7/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, PAJ, INSPEC, EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	R.G. CARR: "ESSTM Switch ISDN Services" INTERNATIONAL SWITCHING SYMPOSIUM, 15 - 20 March 1987, pages 343-351, XP002156038 PHOENIX ARIZONA US page 347, left-hand column, line 53 -right-hand column, line 40; figure 5 ---	1,2,4,5, 13,14
X	EP 0 026 165 A (ANDERSSON JAN ;PAULSSON KURT (SE); TROK BENIAMIN (SE); SWEDBERG VA) 1 April 1981 (1981-04-01) page 10, line 1 -page 13, line 10 --- -/--	1-3,13

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*g\* document member of the same patent family

Date of the actual completion of the international search

26 October 2001

Date of mailing of the international search report

02/11/2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.  
Fax: (+31-70) 340-3016

Authorized officer

Vandevenne, M

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 01/05482

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	J.W. TIMKO: "AT&T SYSTEMS ARCHITECTURE" AT&T TECHNOLOGY, vol. 2, no. 3, 1987, pages 4-13, XP002156039 Short Hills US page 11, left-hand column, line 12 -middle column, line 15; figure 5 ---	1,2,13, 14
A	HENRY G. JUD ET AL: "A modern integrated PABX with centralized message recording and remote distribution" NATIONAL TELECOMMUNICATIONS CONFERENCE, vol. 3, 29 November 1981 (1981-11-29) - 3 December 1981 (1981-12-03), pages F.3.3.1-F.3.3.4, XP002156040 NEW ORLEANS US page F.3.3.2 ---	
A	WO 96 11542 A (WILDFIRE COMMUNICATIONS INC) 18 April 1996 (1996-04-18) abstract -----	

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 01/05482

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0026165	A	01-04-1981	SE 427606 B	18-04-1983
			SE 429082 B	08-08-1983
			AT 7095 T	15-04-1984
			CA 1157552 A1	22-11-1983
			DE 3067450 D1	17-05-1984
			EP 0026165 A1	01-04-1981
			JP 1669163 C	29-05-1992
			JP 3028106 B	18-04-1991
			JP 57111165 A	10-07-1982
			SE 7907914 A	26-03-1981
			US 4529841 A	16-07-1985
			SE 8001267 A	19-08-1981
WO 9611542	A	18-04-1996	US 5652789 A	29-07-1997
			CA 2201298 A1	18-04-1996
			EP 0788704 A2	13-08-1997
			JP 10509847 T	22-09-1998
			WO 9611542 A2	18-04-1996
			US 6047053 A	04-04-2000

THIS PAGE BLANK (USPTO)

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>W0008/7000W0</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/US 01/ 49596</b>	International filing date (day/month/year) <b>28/12/2001</b>	(Earliest) Priority Date (day/month/year) <b>14/02/2001</b>
Applicant  <b>THE WORKPLACE HELPLINE</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

**METHOD AND APPARATUS FOR ASSISTING WORKPLACE SERVICES AND PRODUCTS**

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1

☐ None of the figures.

**THIS PAGE BLANK (USPTO)**



# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/49596

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G06F17/60 G06F9/44

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 983 369 A (BAKOGLU BRIAN ET AL) 9 November 1999 (1999-11-09)	1-11, 17-27, 33,34,39
Y	column 1, line 18 -column 13, line 35	12-16, 28-32, 35-38
Y	WO 00 74193 A (NOWONDER INC) 7 December 2000 (2000-12-07)	12-16, 28-32, 34-38
	page 3 -page 7	
	--- -/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*&\* document member of the same patent family

Date of the actual completion of the international search

9 August 2002

Date of mailing of the international search report

19/08/2002

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Huber, A

**THIS PAGE BLANK (USPTO)**

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/49596

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	ACKERMANN ET AL: "Answer Garden 2: Merging Organizational Memory with Collaborative Help", CSCW '96. PROCEEDINGS OF THE ACM 1996 CONFERENCE ON COMPUTER SUPPORTED COOPERATIVE WORK. BOSTON, NOV. 16 - 20, 1996, ACM CONFERENCE ON COMPUTER SUPPORTED COOPERATIVE WORK, NEW YORK, NY: ACM, US, PAGE(S) 97-105 XP002102511 ISBN: 0-89791-765-0 the whole document	12-16, 28-32, 34-38
X	US 5 806 043 A (TOADER ADRIAN) 8 September 1998 (1998-09-08)  column 2 -column 6; figure 1	1-3, 9, 15, 17-19, 25, 31, 33-35, 39
X	EP 0 952 539 A (NORTEL NETWORKS CORP) 27 October 1999 (1999-10-27)  column 2 -column 3; figures 3, 4	1, 2, 9-11, 17, 18, 23-25, 33, 34, 39
P, X	WO 01 86928 A (KARDOL JOHANNES JAN ; AASMAN JANNES (NL); KONINKL KPN NV (NL); KALB) 15 November 2001 (2001-11-15)  the whole document	1-3, 9, 17-19, 25, 33-35, 39

**THIS PAGE BLANK (USPTO)**

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/49596

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5983369	A	09-11-1999	AU 3372997 A WO 9749030 A1	07-01-1998 24-12-1997
WO 0074193	A	07-12-2000	AU 5296500 A EP 1190475 A1 WO 0074193 A1	18-12-2000 27-03-2002 07-12-2000
US 5806043	A	08-09-1998	US 5774869 A AU 6029296 A CA 2223787 A1 WO 9639668 A1 US 5749075 A	30-06-1998 24-12-1996 12-12-1996 12-12-1996 05-05-1998
EP 0952539	A	27-10-1999	US 6101486 A EP 0952539 A2	08-08-2000 27-10-1999
WO 0186928	A	15-11-2001	NL 1015165 C2 AU 6595401 A WO 0186928 A1	13-11-2001 20-11-2001 15-11-2001

**THIS PAGE BLANK (USPTO)**